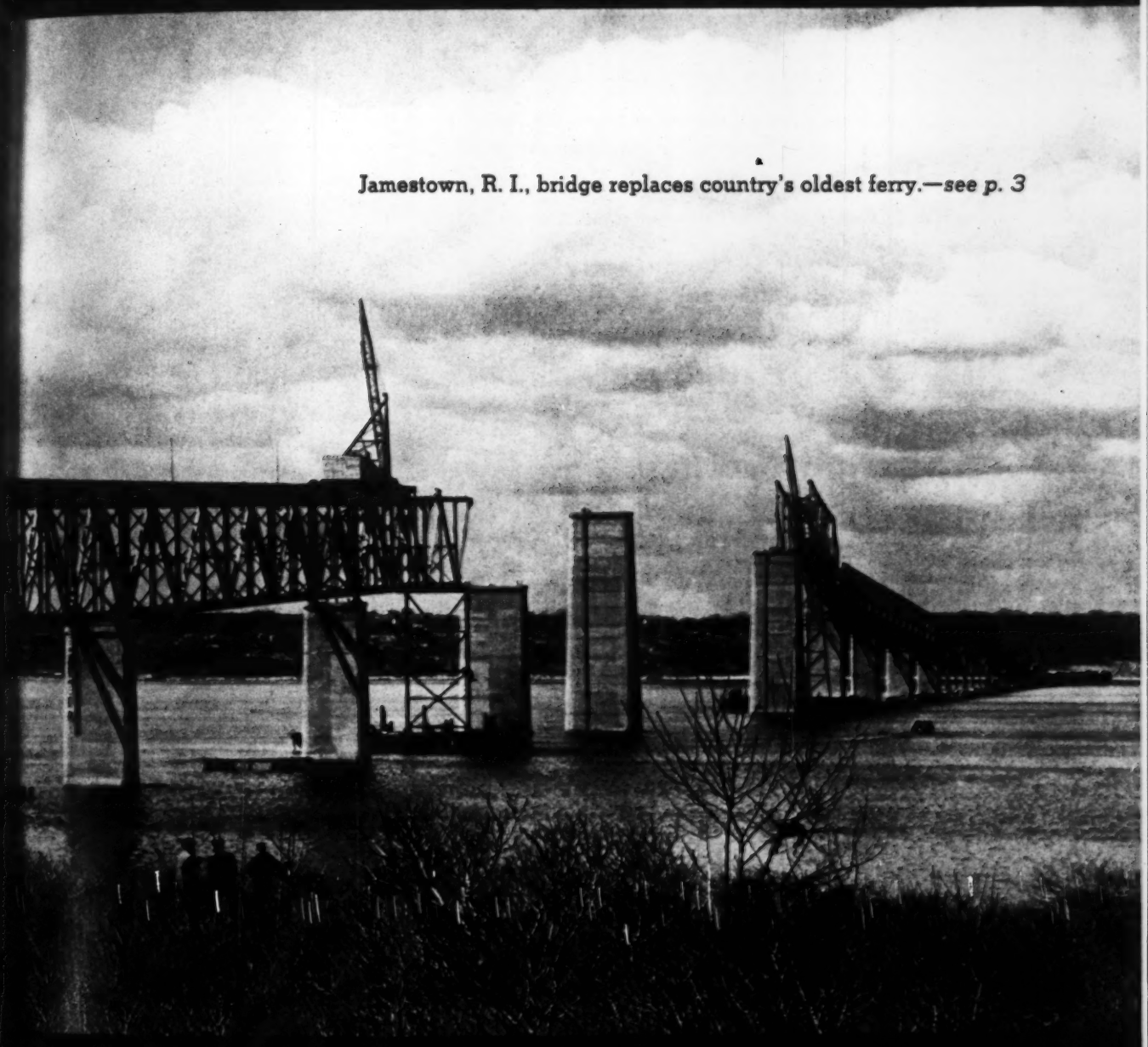
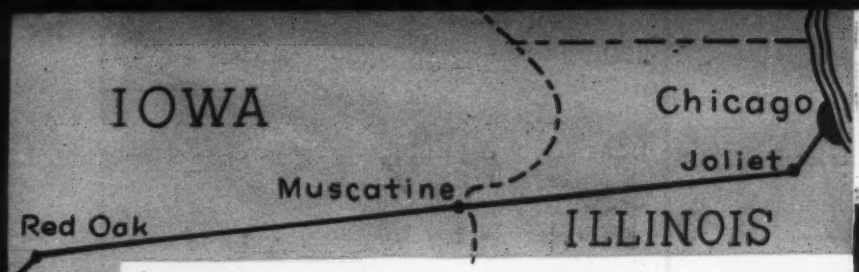
ENGINEERING NEWS-RECORD



Jamestown, R. I., bridge replaces country's oldest ferry.—*see p. 3*

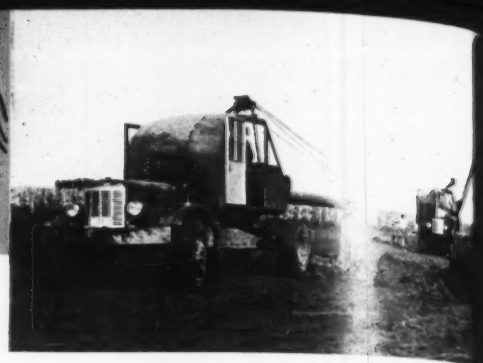
NEWS ISSUE · MAY 30, 1940

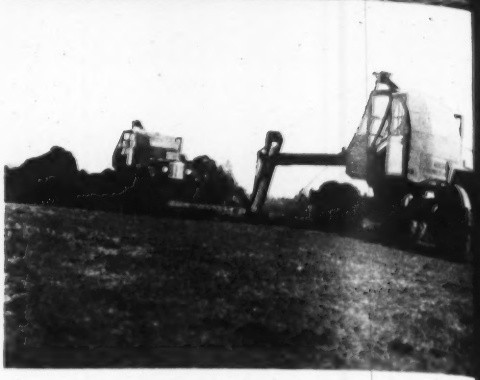


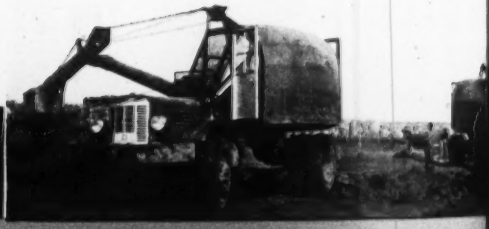
CUTTING COSTS on a 500 MILE JOB!

TRUCK MOBILITY really counts on a job like this one—where five hundred miles of pipeline must be traversed and sections uncovered to reinforce and repair structures.* Two MICHIGAN TRUCK TRENCH HOES did the excavating and backfilling, saving time and money every step of the way—sometimes moving a few feet between operations, and sometimes many miles. No expensive delays for loading or transporting these MICHIGANS! Ready to work at once—and ready to move on again at truck speed. . . . Trenching at depths of 8 to 15 feet, these machines removed 50 to 150 yards of earth at each location, with the same efficiency that has marked MICHIGAN as the outstanding value where modern conditions require modern methods of solution... Full information on the versatile MICHIGAN TRUCK SHOVEL may help you find new ways of saving money on your jobs. . . . A request will bring complete data—ask for Bulletin E-50.

* Natural Gas Pipeline Company of America







Michigan Truck Shovels-Cranes are quickly and easily converted for Clam, Dragline or Trench Hoe work.

MICHIGAN

America's Truck AIR CONTROLS Shovel Specialist

MICHIGAN POWER SHOVEL CO., BENTON HARBOR, MICH., U.S

ENGINEERING NEWS-RECORD

NEWS

Volume 124 MAY 30, 1940 Number 22

NOTES ON THE NEWS

Quick Surveys of Construction Events

▶Two remarks of the President in his Sunday night radio talk have an important bearing on construction preparedness. He said, "the government stands ready to advance the necessary money to help provide for the enlargement of factories, etc." Such help, it is generally agreed, is essential if the job is to be done quickly. He also said there is nothing in our present emergency to justify longer working hours. There is well-founded doubt that this just isn't so in the skilled labor field, where there is no unemployment.

▶Surface faulting in the recent Imperial Valley earthquake is the first that has been experienced in this country since the San Francisco quake of 1906. Horizontal shifts were more pronounced than vertical movements, some of 8 ft. being noted.

▶There is $200,000,000 of direct construction in the new army and navy bills, exclusive of work required to enlarge industrial plants to turn out planes and munitions.

▶When the time comes for the government to seek contractors for preparedness jobs, data on the qualifications of individual firms will be quickly required, says W. D. Dean, general manager of the Bureau of Contract Information, Washington, D. C., adding that every contractor should have his record on file with the Bureau to aid the federal government in its construction planning.

▶At the annual meeting of the New York State Society of Professional Engineers the society voted to classify its members as a possible aid to a defense program.

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Cover photo by Herbert H. Foster

Army and Navy Bill Contains $200,000,000 of Construction

Indirect effect on industrial building expansion to meet munitions manufacturing requirements will add millions more.

About $200,000,000 worth of construction is directly included in the three billion dollar Army and Navy appropriations being rushed through Congress. Of this about $118,000,000 was added after the blitzkreig in Europe produced an armament drive here. These figures take no account of the indirect effects on construction through expansion, governmental and private, of gun factories, shipyards, airplane plants and the like.

Rearmament affects construction also through the changes it introduces in more or less unrelated legislation. Thus removal of the size limitation on WPA projects was influenced by the desire to permit defense projects. And the moribund bill to provide additional funds for the U. S. Housing Authority shows more life as a result of suggestions that it be amended to do something about the housing problem arising when munitions plants in isolated locations are expanded; this problem is already bothering some aircraft plants.

Large sum for military posts

Largest item specifically for construc-

(Continued on p. 6)

NEW CHIEF HIGHWAY ENGINEER OF WYOMING ROAD DEPARTMENT

C. F. SEIFRIED, former office engineer for the Wyoming State Highway Department. began new duties as chief highway engineer of the department on May 8. He has been with the department for the past 20 years, having worked as chief draftsman, engineer of plans, superintendent-engineer, and office engineer. In his new position he will work under the direction of Frank Kelso, state highway superintendent, who made the appointment.

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Chicago May Combine All Transit Facilities

Thirteen years' negotiations for unified transit in Chicago ended May 25 with agreement between city and transit companies to combine all facilities under the new single Chicago Transit Co. Main points of agreement now being put into ordinance form for approval of court, council and voters next election are: (1) New company takes over new city-owned subway and operates street railway, bus and elevated lines with universal transfers; (2) transit system to be rehabilitated at cost of $102,000,000 in eight years; (3) current fares remain on various lines for present; (4) company pays 1½ per cent gross revenues for street use until 1943, then 3 per cent thereafter; (5) $10,000,000 cost of equipping subway shared equally by city and company; (6) company pays $5,000 of estimated $16,000 per mile cost of repairing streets when rails are removed for bus operation.

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Wisconsin Court Holds Contractors' Dues Illegal

The supreme court of the state of Wisconsin has ruled that the assessment of dues by the Associated General Contractors on the basis of the volume of contracts obtained within the state is illegal. The decision was handed down on a suit in which the association was seeking to collect $410 from William Lathers, Jr., Madison contractor.

Reversing a decision of the lower court, the supreme court said: "The public policy which insists upon competition between bidders for public work and dictates that contracts be let to the lowest bidders is violated when the prospective bidders enter into an agreement to exact from each other a percentage of the amount of each contract secured during the ensuing year. If the tendency or the purpose of a contract works against the public policy it is illegal even if no actual damage be shown."

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Cuban Section of Water Works Group Formed

Formal inauguration of the Cuban Section of the American Water Works Association took place in Havana on May 21 when Norman J. Howard, president of the A.W.W.A., presented credentials to the organization. Attending the ceremonies with Howard was Col. W. F. Rockwell, head of the Pittsburgh Equitable Meter Co. and also president of the Water Works Manufacturers Association.

The Cuban Section had its origin several years ago when a local association of waterworks men on the island was formed.

Eduardo J. Chibas of Havana, president of the new section, said that federal authorities in Cuba are being guided by the recommendations of the section, looking toward the elimination of deficiencies in water supply facilities. As a step in this direction he reported that a presidential decree had been issued which makes it necessary for the capital city of Havana to set aside 10 per cent of gross water revenues for rehabilitation purposes.

Producers Council Plans War Preparedness Aid

The Producers Council, manufacturers of building materials and equipment producing a substantial portion of the nation's requirements for building construction, at its annual meeting at Louisville, Ky., last week appointed a Building Manufacturers Preparedness Committee composed of the Council's president and five past presidents to offer aid to the federal government in a war preparedness program. The American Institute of Architects, meeting at the same place, also pledged active participation in a defense program and appointed Stephen F. Voorhees, New York chairman of a national preparedness committee. Edwin Bergstrom, Los Angeles, was reelected president of the A.I.A.

Wide World Photo

WORLD'S LARGEST SCREEN WELL UNDER CONSTRUCTION

THIS WELL, now 106 ft. in diameter, will eventually be a screen well 100 ft. deep with a finished inside diameter of 93 ft., or what is believed to be the largest well of its type in the world. It is being constructed at the Nottingham filtration plant at Cleveland. Excavation totals 30,000 cu.yd., practically all of which is shale. About 2 tons of dynamite will have been required in the excavation work. For a lining 11,000 cu.yd. of concrete and 300 tons of reinforcing steel will be used.

A tunnel 10 ft. in diameter and about 6 miles long will connect the well with an intake crib in Lake Erie about 4½ miles from shore. Capacity of the tunnel will be about 275 million gal. per day, 200 million gal. of which will be required for the ultimate capacity of the filter plant.

Construction is being carried out as a WPA project for the division of water and heat of the Cleveland department of public utilities. At present J. W. Harmon is general WPA superintendent on the job. The work is under the general supervision of A. G. Levy, engineer of construction and surveys for the city of Cleveland, with L. A. Richards, supervising construction and engineering, and A. C. Malley, in charge of the careful dynamiting work required.

Defense Argument Used In Passing WPA Bill

Removal of $50,000 cost restriction on projects made at President's insistence that it would interfere with national defense.

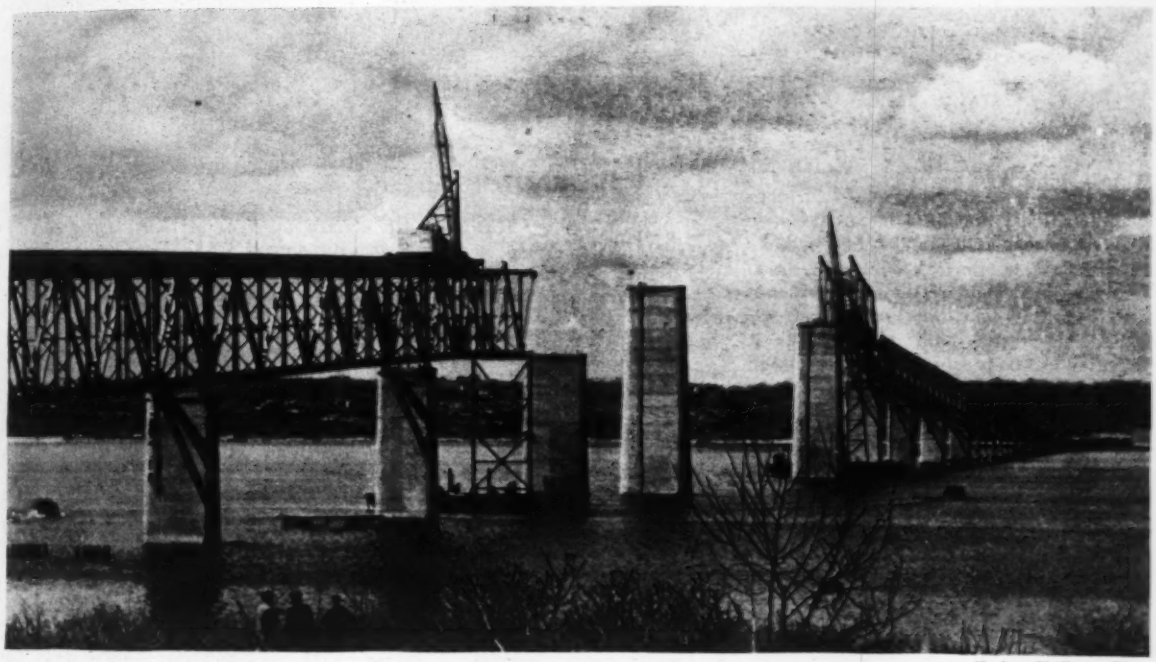
All restrictions on the size of building and construction projects which may be undertaken by the WPA were removed from the relief appropriation in debate on the floor of the House. This change had been vigorously urged by the President, who said that a proposed restriction of structures to $50,000 would reduce WPA to leaf-raking and would interfere with use of WPA on projects for national defense.

Desire for WPA emphasis on national defense also caused the House to increase from $20,000,000 to $40,000,000 the amount which WPA may allocate to federally-sponsored projects. A proposal that priority for defense projects be written into the bill was defeated as likely to cause administrative difficulty, but Commissioner Harrington has stated that he is now and will continue to give priority to such projects. There is a clause in the bill preventing the money from being used for armaments, but projects for airports, strategic roads, and construction at army and navy posts can be emphasized.

Other changes made by the House would require that single men be permitted to work only 65 hours instead of the usual 130, would exempt heads of families over 45 from the 18-month layoff, and would prohibit employment of any Communist or member of a Nazi bund.

No specific earmarking

Unsuccessful attempts were made to earmark $50,000,000 for flood control and navigation, and $10,000,000 for public buildings, and to add a $500,000,000 PWA program to the bill.



Herbert H. Foster Photo

THIS BRIDGE REPLACES NATION'S OLDEST FERRY SYSTEM

To REPLACE a ferry system which has provided some form of transportation since 1675, a $3,000,000 toll highway bridge is nearing completion across the Western passage of Narragansett Bay. Known as the Jamestown Bridge, it joins Connecticut Island and the Rhode Island mainland.

Starting at the west end, the project consists of 3,535 ft. of plate girder and rolled beam spans; three deck truss spans each about 270 ft. in length; two 256-ft. anchor spans flanking a 640-ft. cantilever span; then three more deck truss spans each about 270 ft. in length, and, finally, 680 ft. of plate girder construction to make the overall length 6,982 ft. A 22-ft. roadway and a 3-ft. sidewalk will be provided. Clearance above mean high water is to be 135 ft.

The work, scheduled for completion early in July, is being done by the Jamestown Bridge Commission with a $1,404,000 PWA grant and a $1,700,000 bond issue. Merritt-Chapman & Scott, New York, represented on the job by Wm. Denny, superintendent, did the substructure work. Harris Structural Steel Co., New York, with Thomas Harris, secretary of the company, supervising the work and Harry Stettler acting as job foreman, is doing the superstructure work. Wm. H. Bruce is resident engineer for the consulting engineers, Parons, Klapp, Brinckerhoff & Douglas, New York City. Tom Iverson is resident engineer inspector for the PWA.

Bridging the Alabama at Selma

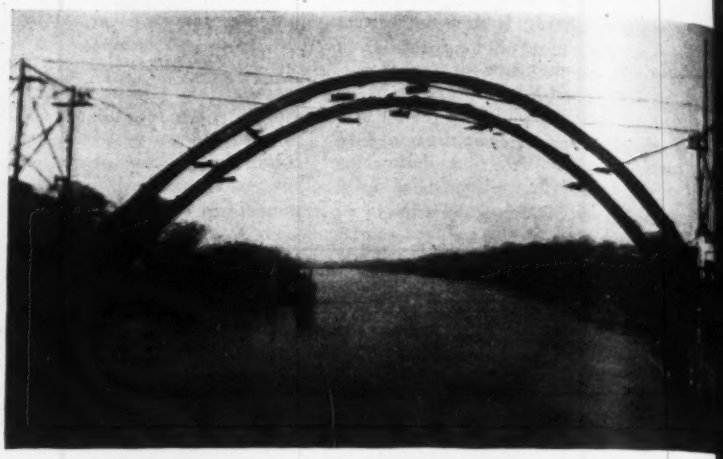
THE MAJOR PROBLEM to be overcome in constructing a 1,248-ft. bridge to span the Alabama River at Selma, Ala., was the erection of a 240-ft. steel arch across the main channel. Other work on the $680,000 job included construction of ten concrete arch spans varying in length from 41 ft. 6 in. to 154 ft. 6 in. Two 20-ft roadways separated by a center curb and two 5-ft. sidewalks are provided.

The general contractor solved the difficulty of erecting the steel arch by using a tieback system in lieu of false work and placing the rib section with a floating derrick. Each tower consisted of two 42-ft. 15-in. WF columns, one on either post of the pier, tied together at the top with a 12-in. WF beam and cross-braced with 4x3-in. angles and steel sheetpiles. Once these towers were anchored in place with temporary anchor bolts in the piers and 1½-in. cables leading to anchor bolts in the flanking concrete arches, erection of each rib in eight sections, the heaviest weighing 24½ tons, was begun.

Starting at the south end, sections 1, 2 and 3 of both ribs were erected and guyed off with 1½-in. cable to a temporary tower set on the abutment. Section 4 of each rib was then cantilevered outward and the floating derrick moved over to erect sections 1, 2 and 3 at the north end of the ribs, these sections being guyed back to a temporary tower as had been done at the south end. Section 4 of the north half of each rib was then cantilevered outward, making it possible to put the closing key in place. The roadway of the steel arch span is to be carried in part on columns and in part by hangers from the steel arch, the arch ribs rising to a height of 35 ft. above the roadway.

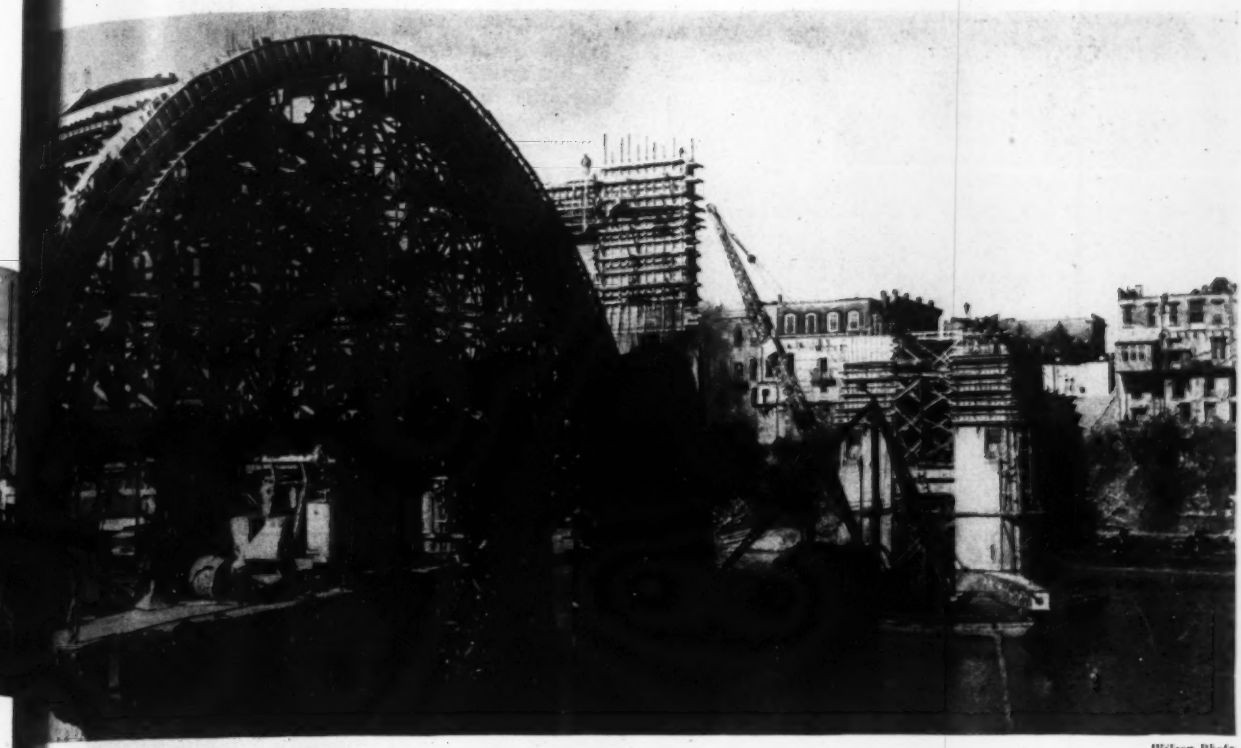
All concrete arches were erected on wood falsework supported by two-pile bents on varying centers to limit the length of the stringers to a maximum of 12 ft.

The bridge, which was opened to traffic last week, was built by the Alabama State Highway Department to replace an old steel truss bridge built in 1884. For the department, J. P. Trotter is bridge engineer, Louie Redding, resident engineer and Rex Sikes, project engineer. T. A. Loving & Co., Guildsboro, N. C., with John F. Loving, construction superintendent, was the general contractor. Vandergriff Construction Co., Montgomery, Ala., represented on the job by Floyd Millford, were instrumental in constructing the approaches.



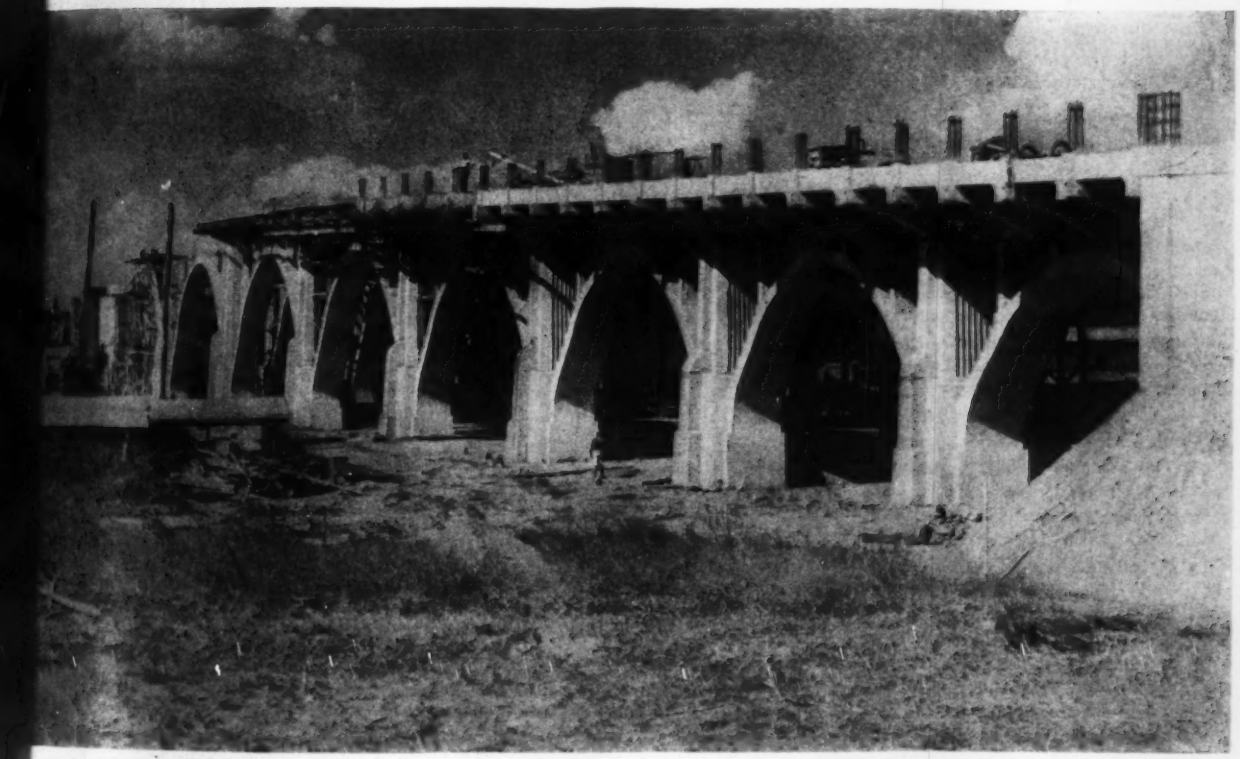
EACH steel rib erected in eight sections, using cable tiebacks and a floating derrick. The heaviest weighed 24½ tons. Ribs rise 35 ft. above roadway.

AS THE 240-ft. steel arch approaches completion one of its most unusual features becomes evident, the use of Vierendeel type sway bracing between the ribs.



Wilson Photo

CONCRETE arches built on wooden falsework consisting of two-pile bents at varying centers to limit maximum length of stringers to 12 ft. Floating derrick for erecting steel arch is shown.



TEN CONCRETE arches varying in length from 41 ft. 6 in. to 154 ft. 6 in. are used with one 240-ft. steel arch, to make an overall length of 1,248 ft. Concrete floor slabs are carried on 30 in. girders, placed on 10 to 18-ft. centers. Over each pier 1½-in. expansion joints are provided.

San Francisco Loses Hetch Hetchy Appeal

The U. S. Supreme Court May 20 denied the city of San Francisco the right for a rehearing of the Raker Act case in which a contract between the city and Pacific Gas & Electric Co. for distribution of Hetch Hetchy power was held invalid. The city had contended that the prohibition clause in the Raker Act against the sale of hydroelectric power to a private concern had been changed by the court and Secretary Ickes into a mandate requiring the city to construct a municipal power plant. It was also contended that the city had the right to use the facilities of a private corporation to distribute the power.

For further details of the Hetch Hetchy power case, see *ENR*, May 9, 1940, p. 626, and *ENR*, Apr. 25, 1940, p. 562.

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Ira H. Jewell Dies; Water Purification Engineer

Ira H. Jewell, water purification engineer and inventor of many pieces of filter equipment, died May 21 in Chicago. He was 70 years old. One of his last inventions was a subsurface washing arrangement which had been installed at Kenilsworth and was under test by engineers of the city of Chicago.

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Army and Navy Bill

(Continued from page 1)

tion in the appropriations is $90,311,000 for military posts plus authority to enter into contracts for $6,000,000. Of this sum $19,000,000 will go for payments on contracts already authorized. Bulk of the money, $47,977,000, is lumped into a fund for emergency construction, which includes post construction necessitated by expansion of the air force, increased size of the Army, additional equipment to be purchased, and the plans to increase production by building government plants. The rest is distributed over about 33 different military posts; $12,734,000 to the Alaskan air base; Panama Canal zone $2,184,000; Puerto Rico $1,201,000; Wright Field in Ohio $1,840,000; Schofield Barracks in Hawaii $1,264,000; and lesser amounts to other posts. The legislative situation as regards these projects has not yet stabilized, but apparently the work could be done either with or without advertising of contracts.

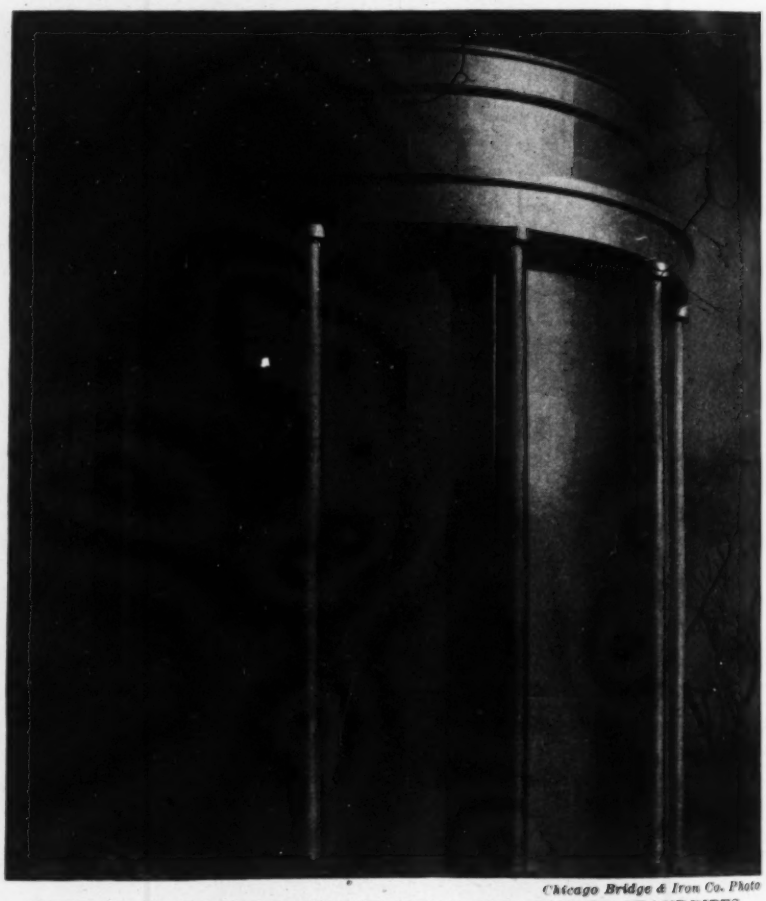
For Naval air bases, $45,000,000 is provided in the Navy appropriation bill. The figure of $124,000,000 for airbases mentioned in the press is simply an authorization permitting projects costing that amount to be built when money is made available. Most of the authorizations increase the permitted size of bases already authorized in the Navy's program. Largest authorizations are $13,246,000 for Norfolk, Va., $12,690,000 for Coco Solo, C. Z., $24,204,000 for Quonset Point, R. I., and $25,000,000 for Corpus Christi, Tex. The $45,000,000 actually appropriated will be used for pilot training facilities in the South.

Also available to the Bureau of Yards and Docks for its regular Public Works program is $58,213,000. This money will be scattered over a great number of projects. The larger include $6,000,000 drydock facilities at San Francisco, $3,382,000 worth of additional work at the Alameda air station, $2,073,000 for additional facilities at the New London submarine base, and a $3,000,000 breakwater at Coco Solo, C. Z. base.

As regards the Naval airbase program, the authority granted last year to award contracts on a cost-plus-a-fixed-fee basis outside the continental United States is extended to include all airbases. The 10 per cent upper limit set on the fees is now reduced to 6 per cent. The Navy likes this type of contract and will doubtless make use of the authority.

A few million dollars worth of temporary barracks will be built under the bill, and there is some construction included in a $30,000,000 item for coast defense.

Substantial sums are provided in the bill for purchase of production facilities to speed up military procurement, but it now seems likely that most of this money will go for machinery rather than construction.



Chicago Bridge & Iron Co. Photo

HERE IS WHAT SOME PEOPLE WANT IN THE WAY OF STANDPIPES

FACING the problem of constructing an attractive 1,000,000-gal. standpipe in an "A" resident zone, officials of the Stamford Water Co. allowed residents of the immediate neighborhood to choose the design considered most artistic of the several submitted. As a result the above standpipe, 50 ft. in diameter and 75 ft. high, was constructed. The columns are merely decorative.

Clarence M. Blair, New Haven, Conn. was engineer in charge. The work was done by the Chicago Bridge & Iron Co. for the Stamford Water Co., of which V. O. Ketcham is general manager.

Earthquake Damage Not Exaggerated

Alamo Canal is wrecked by cracks and sloughing. Surface faulting in area is severe

Preliminary reports of the damage done by the Imperial Valley earthquake of May 18, as reported in last week's issue, p. 695, were in no wise exaggerated, a later checkup reveals. A telegram from M. J. Dowd, chief engineer and general superintendent, Imperial Irrigation District, states that in one 18-mi. stretch of main canal nine major breaks from 150 ft. to 250 ft. wide occurred, and many miles of banks were cracked longitudinally, the cracks varying in width from a few inches to 5 ft. or more. Another main canal in Mexico was completely destroyed over a length of 12 miles. Dowd reports canal alignment displaced 40 to 70 ft., and the complete disappearance of banks in some places. The large timber flume 800 ft. long that carries the west side main canal over the New River in Mexico collapsed, as shown in one of the accompanying illustrations. In the United States there was some damage to Imperial Irrigation District canals and structures in the southeast portion of the Valley, this damage consisting of badly cracked banks and some displacement. Highway bridge failures were not numerous, but were of two types, one characterized by shifting of the superstructure off of the foundations, and the other by foundation failure.

Surface faulting

John E. Shield, structural engineer of Los Angeles, and *News-Record's* correspondent, reports from first-hand information that the shocks "left irre-

(Continued on p. 11)

Typical cracking in Alamo Canal banks. Many breaches 250 ft. wide occurred.

What the quake did to a fill on the highway north of Brawley.

Lateral canal and highway displaced nearly 8 ft. at a fault.

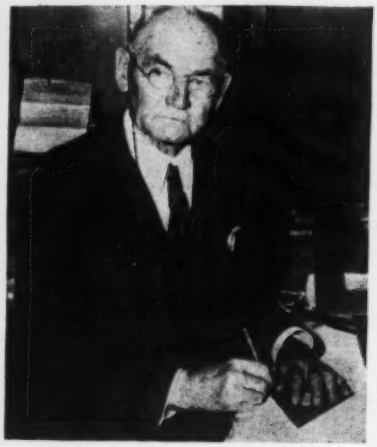
This wrecked flume carried canal over New River in Mexico.

Controlling mosquitos along 4,000 miles of newly made shoreline in the various reservoirs TVA has been building is the job of **W. G. Stromquist,** TVA sanitary engineer. The problem varies from next to nothing for two reservoirs to a complicated one at Wheeler, where the U. S. Biological Survey has a migratory water fowl refuge and does not relish oil and Paris green dust as duck feed.

Not a man, but as one of three women in the United States known to be licensed to do general contracting, **Polly Lux,** head of Lux Construction Co., Miami Beach, Fla., is doing a man's work. Miss Lux, glorified by Ziegfeld as "Polly of the Follies," organized her own company last year and is now starting construction on her third large hotel in Miami Beach, which will be called Lux Towers.

H. P. Warren and **J. E.** Jewett, senior civil engineers of the Rock Island, Ill., district, U. S. Engineers, are framed in a 108-in. pipe while visiting the plant making pipe for the new $1,500,000 interceptor system for Rock Island. At present, Jewett handles land acquisition and Warren clearing of overflowed lands in connection with the 9-ft. canalization of the Upper Mississippi River.

MEN AT WORK



Although 88 years old, **Frederick W. Bateman,** head of Bateman and Chase, civil engineers of Clinton, Mass., continues an active consultant practice. He is the only surviving member of the first class to be graduated from Worcester Polytechnic Institute, the class of 1871. Fifty years ago Bateman supervised construction of the White River Junction Bridge. Since then he has done hydraulic, railroad, and teaching work.

On the firing line on Cleveland's Main Ave. Bridge project are **W. E. Blaser,** bridge engineer of Cuyahoga County and **R. W. Dietrick,** chief resident engineer. With the county engineer's office since 1911 and chief draftsman on the Detroit-Superior High Level Bridge, Blaser has been county bridge engineer since 1933. Dietrick, with the county engineer's office since 1933, was previously with the New York Central.

Recently completing ten years of highly creditable service as city manager of Sacramento, Calif., **James S. Dean** was in line for some mark of civic appreciation, the city fathers thought, and while he was on vacation they remodeled his office with all new furnishings and numerous streamlined conveniences. Maps and charts are behind drapes; back of his desk is a built-in working table with glass top, roomy compartments.

MEN AND JOBS

H. HERSHEY MILLER, former chief materials engineer for the Pennsylvania State Department of Highways, was recently appointed engineer of tests for the Pennsylvania Turnpike Commission.

W. B. STEVENSON, of Superior, Wis., and state field engineer in Wisconsin for the WPA since its formation, has been appointed acting manager of district No. 2 with headquarters at Green Bay, Wis.

CAPT. JOHN R. CRUME, JR., now stationed at U. S. Military Academy at West Point, has been assigned to duty with the U. S. Engineers in the Little Rock, Ark. district office. He will act as assistant to CAPT. LEE B. WASHBOURNE, district executive officer. Following his graduation from West Point, Crume was assistant to the district engineer at Vicksburg, Miss. for a year. He then spent a year with the Second Engineer Regiment at Fort Logan, Colo., a year in special study at the University of California, and a year as a student at the Engineer School at Fort Belvoir, Va. He served for a time on the West Coast and in the Panama Canal Zone before going to his duties at West Point.

VERLIN G. THOMPSON, district engineer for the WPA in the Oklahoma district, has resigned to enter private practice. He will be associated with FRED COBB, consulting engineer in the construction of city pavements through the WPA contract management system, which calls for WPA furnishing only the unskilled labor.

JAMES H. CURTIS, former engineer of Floyd County, Iowa, has opened offices for private practice in Council Bluffs, Iowa. Curtis was recently furloughed from the PWA for which he had been in charge of inspection for four years on work at Council Bluffs.

RAYMOND H. JUSTEN, engineer of Johnson County, Iowa since 1933, has been rehired by the county board for a three-year term. Following graduation from the University of Iowa in 1920, Justen has been employed in the county engineer's office in Johnson County ever since.

ALLEN J. NEGROTTO, civil engineer, has formed the A. J. Negrotto Engineering Co. with offices in New Orleans. Negrotto until recently was engineer for the Work Projects Administration, Region No. 6, which comprises the states of Arkansas, Louisiana, Mississippi, Oklahoma and Texas.

MAJ. HARRY W. HILL, instructor for the Indiana National Guard at Gary, Ind., has been named to succeed MAJ. A. G. MATTHEWS as assistant to Lieut. Col. Charles P. Gross, at the Rock Island district office of the U. S. Engineers. Maj. Matthews has been assigned as officer in charge of the army map plant at Washington, D. C.

SAMUEL L. TOLMAN resigned as superintendent of the Ward's Island New York City sewage disposal plant on May 15 to take a position with the Jeffrey Co. of Columbus, Ohio. Tolman was with the Jeffrey Co. as sanitary engineer previous to his association with the New York Department of Public Works.

JOHN C. OAKES, formerly a colonel with the army engineers, has been named to the board of adjustment of the Charleston, S. C. city zoning ordinance to succeed FRANK E. LAWRENCE, resigned.

NORMAN C. RIGGS, head of the department of mechanics at Carnegie Institute of Technology, will retire at the end of the present school year. Riggs, who graduated from the University of Missouri in 1895 and obtained a master's degree from Harvard University in 1898, taught for three years at Penn State College following one year of teaching at the University of Missouri. He also taught for six years at Armour Institute of Technology before going to Carnegie Tech in 1908.

LIEUT. COL. J. D. ARTHUR, JR., chief engineer in the Huntington, W. Va. district, U. S. Engineers, has gone to Pittsburgh to act temporarily as head of the Pittsburgh district for the Army Engineers. He replaces LIEUT. COL. W. E. R. COVELL, who resigned from the army May 1 to go into private engineering work in Arkansas. Col. Arthur will act as head of the Pittsburgh district until someone is appointed to fill the position. In the meantime he will continue in charge of the Huntington area.

A. R. MARQUARDT, who for some years has acted as part-time city engineer of Little Falls, Minn., has received a full time appointment.

C. W. ANDERSON, former regional engineer of the Work Projects Administration to be stationed in St. Paul, has been named acting WPA Administrator for the State of Wisconsin. MARK MUTH, of Green Bay, has been nominated for the post by President Roosevelt to succeed PHILIP D. FLANNER who resigned. Muth's appointment must be confirmed in the U. S. Senate.

T. A. RIGNEY, former city engineer of Laurel, Mont., recently opened an office for private engineering practice at Billings, Mont. Rigney has been succeeded by ROBERT J. TORRENS as city engineer.

L. P. COOKINGHAM, city manager of Saginaw, Mich. and president of the International Association of City Managers, has been chosen city manager of Kansas City. Cookingham goes to Kansas City after 20 years of municipal administrative work. He began his career in 1920 as engineer in the public works department, Flint, Mich., advancing to office engineer and manager. Following work as city manager of Clawson, Mich., a suburb of Detroit, and at Plymouth, another suburb of Detroit, he was made city manager of Saginaw in 1936. Cookingham holds a civil engineering degree from the University of Detroit.

L. D. HOWARD, assistant maintenance engineer for the South Dakota State Highway Department, has been named state safety engineer for the highway department. He will continue his duties as assistant maintenance engineer in the department.

J. ROMEO GAURVEAU, civil engineer, has been elected president of Sullivan Consolidated Mines Ltd., Montreal, to succeed A. H. PAVADIS, resigned.

LIEUT. COL. W. M. VEITCH, city engineer of London, Ont., has been appointed district engineer officer for Canadian Military District No. 1 with headquarters in London. He succeeds MAJ. W. E. ANDREWS, who has been transferred to a similar post in the city of Toronto.

GEORGE HARTLEY, who has been employed for many years by Robinson & Steinman, consulting engineers of New York City, has accepted a position as senior engineer in Peru, S. A., with the Cerro de Pasco Copper Corp.

WILLIAM S. BARRETT, instructor in civil engineering at the University of Texas, has been awarded a scholarship for graduate study at Harvard University for the 1940-41 year. Barrett was formerly with the Texas state highway department. It was incorrectly stated in *ENR*, May 9, 1940, that Barrett had received a scholarship at M.I.T.

MEETINGS

BUILDING OFFICIALS CONFERENCE OF AMERICA, Hotel Jefferson, St. Louis, Mo., June 3-6.

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, annual meeting, Hotel Pennsylvania, New York City, June 4-6.

NATIONAL CONFERENCE ON PLANNING, San Francisco, Calif., June 8-12.

AMERICAN SHORE AND BEACH PRESERVATION ASSOCIATION, summer meeting and tour, Hotel Ashworth, Hampton Beach, N. H., June 17-18.

AMERICAN SOCIETY FOR TESTING MATERIALS, annual meeting, Atlantic City, N. J., June 24-28.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION, annual meeting, University of California, Berkeley, Calif., June 24-28.

AMERICAN SOCIETY OF CIVIL ENGINEERS, annual convention, Denver, Colo., July 24-26.

REGION AND LOCAL

BUILDING CONTRACTORS ASSOCIATION of California, annual convention, Los Angeles, June 4-5.

AMERICAN WATER WORKS ASSOCIATION, New York Section, spring meeting, Ithaca, N. Y., June 6-7.

MONTANA ASSOCIATION of County Commissioners, annual convention, Havre, Montana, June 17-19.

ELECTIONS AND ACTIVITIES

THE PITTSBURGH CHAPTER of the American Institute of Architects, and the Pennsylvania Society of Professional Engineers, has won its battle with the city of Pittsburgh to make mandatory the seal and signature of a registered architect or engineer on the plans of all buildings exceeding $10,000 in cost.

PAUL WEIR, head of filtration for the Atlanta, Ga., waterworks, has received notification of his election as chairman of the purification division of the American Waterworks Association.

G. E. HARRINGTON, of Washington, Md., is the new president of the Maryland and Delaware Water and Sewerage Association, succeeding A. M. Tawney of Fort Meade. More than 200 were in attendance at the organization's fourteenth annual convention in May at Salisbury, Md. Other new officers are: J. M. Jester, Hyattsville, first vice-president; R. A. Morris, Sykesville, second vice-president, and Arthur W. Blohm, Maryland Department of Health, secretary-treasurer.

A DEMONSTRATION of pipe cleaning by the National Water Main Cleaning Co. and an inspection of the Trenton filter plant featured the spring meeting of the New Jersey Section of the American Water Works Association in Trenton on May 22. Over 100 members attended the technical sessions which dealt with pipe linings, cathodic rust prevention, copper pipe and centrifugal pumps.

Short Courses

TRAFFIC AND SAFETY EDUCATION: sponsored by the Illinois Division of Highways at the University of Illinois. Starts July 1.

PUBLIC HEALTH WORKERS AND SANITATION OFFICERS, Texas Technological College in cooperation with the Texas State Health Department and the Texas State Department for Vocational Education, Lubbock, Tex., June 6-July 15 (first term) and July 16-August 23.

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Registration Examinations

IOWA: Professional engineers, June 4-5; land surveyors, June 6, State House, Des Moines, Iowa.

IDAHO: Professional engineers, Boise, Idaho, June 13-14.

MICHIGAN: State Board Examinations for architects, engineers and surveyors, University of Michigan, Michigan State College, University of Detroit and Michigan College of Mining and Technology, June 17-19.

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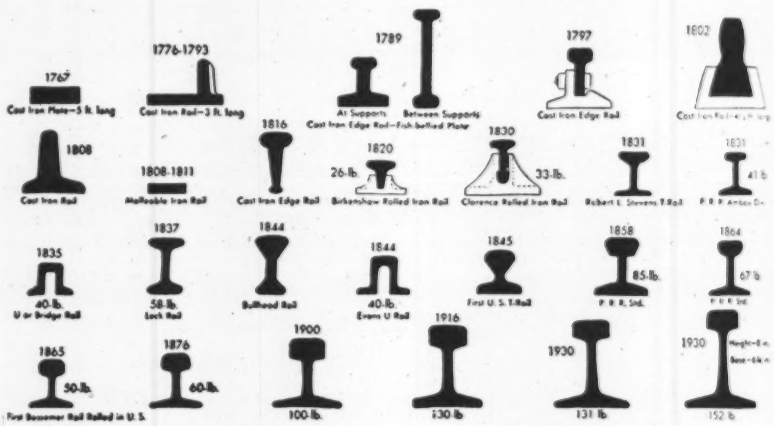
Engineering Conferences

MANAGEMENT CONFERENCE, sponsored by Stevens Institute of Technology, Johnsonburg, N. J., June 22-23.

PENNSYLVANIA SEWAGE WORKS ASSOCIATION, 14th annual conference, Pennsylvania State College, State College, Pa., June 26-28.



Carnegie-Illinois Steel Corp. Photo

DIAMOND ANNIVERSARY OF ROLLING FIRST STEEL RAIL NOTED

IN RECOGNITION of the fact that it was T. B. Ward's Chicago rolling mill in which the first American steel rail was rolled 75 years ago, the Traffic Club of Chicago will commemorate the development of the modern rail and first rail rolled at a meeting to be held June 10. The first steel rails were rolled in Chicago on May 24, 1865.

In 1855, the railroads, seriously hampered by the limitations of the iron rail, which had to be replaced several times a year if subjected to heavy service, were importing steel rails from England at a cost often as high as $166 per ton. In 1877, with production well under way in this country, the price of steel rails had been lowered to $45 per ton; half a million miles of steel rail were laid between 1865 and 1885.

Ward's original mill, established in 1857, became the nucleus of the North Chicago Rolling Mill Co., which in turn was the nucleus of the Illinois Steel Co. It became a subsidiary of the U. S. Steel Corporation in 1901. The steel plant Ward established in North Chicago continued in operation until 1907.

Earthquake Damage

(*Continued from p. 7*)

futable evidence of surface faulting, the first, it is believed, that has occurred in this part of the country since the 1906 earthquake. This faulting is in the form of a pressure rift and, inasmuch as the depth of the silt in this vicinity is reported to be on the order of 1,000 ft., it is rather remarkable that this rift is so distinct and well-defined. The surface trace extends from a point half way between El Centro and Holtville in a southwest direction; it has been observed as a straight line by an airplane flying about 100 ft. high for about 20 miles into Mexico. Between El Centro and Holtville the relative north-south displacement was nearly 2 ft., and the east-west somewhat over 1 ft., while at a point near the Mexican border the north-south displacement was 9 ft., the east-west 8 ft., and the vertical 3 ft."

Shield reports that the first shock of severe intensity occurred at 8.35 p.m., followed by a number of smaller ones, and then another strong shock about 10.30. The first shock caused the damage in the El Centro and Calexico region, whereas the second damaged the area farther north. The ground surface motion was so severe in the area of Brawley in this northern region as to cause large ground sloughing. The bridge over the New River west of Brawley had long filled approaches in which sloughing caused settlement of about 4 ft. The movement also caused the caps of wood pile bents to be displaced about 16 in. parallel to the roadway.

Canals damaged by fault shifts

Surface faulting did not, so far as is known, affect any engineering works other than the All-American Canal on the American side of the border and the International Canal in Mexico. The All-American Canal had no water in it but the other was operating, and the resulting breaks interrupted the water supply for the entire Imperial Valley for four days. (As a result of rush repairs, first water reached the Valley on May 24.) Storage was sufficient for domestic consumption but it was necessary to curtail irrigation operations. All domestic water comes from the canal and is stored in elevated tanks in the various towns. A new tank in Brawley had been designed to resist a lateral force of 10 per cent and a tank in El Centro had been strengthened by that amount. Of the nine tanks in the area these were the only two that were not damaged.

As previously reported, building damage was greatest in Brawley, and there as elsewhere the wood-joisted unreinforced unit masonry suffered most. Damage varied from falling parapet walls to complete collapse. Four such buildings actually collapsed, and 20 others will have to be demolished. The remaining buildings (about 75) suffered about 25 per cent damage, mostly in arcades over the sidewalks and in fractured walls.

There were few buildings of the framed type. A light steel frame hotel with wood floors and partitions suffered only plaster cracking. A concrete frame hotel with concrete floors and light concrete walls suffered major structural damage. Industrial buildings of concrete frame and standard-thickness concrete walls did not suffer appreciably. Buildings designed to resist earthquake forces were undamaged.

In the town of Imperial all the buildings were old, and about half collapsed or will have to be pulled down. El Centro, although much closer to the surface faulting, was less severely damaged than Brawley, although its construction was of the same type. Generally speaking, damage was confined to fallen parapets, some cracked walls, and loosening of the junction with arcade structures. Calexico was damaged somewhat less than El Centro, although the damage was similar in nature. This town is much closer to the more severe surface faulting, so that the smaller amount of damage may be attributable, in Shield's opinion, to the fact that the community experienced a heavy earthquake in 1927 and at that time probably lost its worst construction.

To Classify New York Engineers For Possible War Emergency

New York State Society of Professional Engineers takes steps to classify its membership for special duties in case of war

Classification of members of the New York State Society of Professional Engineers on the basis of emergency service in defense of the country was approved as an immediate objective at the thirteenth annual meeting of the society held in New York May 24-25. Attainment of this objective has been facilitated by a questionnaire recently sent to the membership in anticipation of the publication of the society's first yearbook. Publication of the yearbook now seems assured, according to Frederick H. Zurmuhlen, president, who stated that a board of editors is being appointed and that arrangements for financing the book through sale of advertising space have been completed.

President Zurmuhlen also reported that the society now maintains at its headquarters a list of members who are qualified to serve as experts in legal cases, in valuation work and the like. Notices that such a list is available are carried in the *Law Journal*, the expense of the notices and of keeping the list up to date being covered by a fee charged those who are included in the listing. The society also maintains at headquarters a list of members seeking employment.

Engineers in war

The tasks that will fall to engineers in case of war were discussed at the luncheon meeting of the society by Rear Admiral Ralph Whitman, head of the Civil Engineer Corps of the Navy in the New York district. Admiral Whitman said that no one wanted to see the country in war, but that if war comes the engineer's training and experience makes him peculiarly well qualified to render useful service.

Other speakers at the luncheon were President Zurmuhlen and I. V. A. Huie, head of the department of public works of New York City.

More highway funds

The society put itself on record as in favor of an increase in state appropriations for highway construction and maintenance to bring the expenditures up to the $50,000,000 a year that the state superintendent of public works holds to be necessary. A state-wide highway planning survey also was indorsed.

Free engineering

The practice of supplying free engineering service that is followed by some manufacturers of products used in construction work was condemned by the society as was the practice of asking engineers to participate in the organization of sanitary districts on a contingent-fee basis. Recognizing that some manufacturers resort to the offer of free engineering service only under the spur of competition, the society authorized the president to inaugurate a joint study of the subject with the manufacturers concerned.

Frederick H. Zurmuhlen was reelected president, as were the vice-presidents Andrew K. Johnson and Hubert E. Snyder, the financial secretary Ernest F. Fox and the treasurer, Patrick M. Corry. New directors are Joseph A. Brady, Gardner C. George and Sylvester C. Sullivan.

OBITUARY

OTTO H. FALK, chairman of the board of the Allis-Chalmers Mfg. Co., Milwaukee, died May 21 at the age of 74. A lieutenant-colonel in the Spanish-American War, he attained the title of brigadier-general in the National Guard, from which he retired in 1911.

STUART HOWARD, in the employ of the city of Montreal as a civil engineer for over 42 years and retired for the last six, died there recently at the age of 91. During the building the St. Catharines, Ont., water works, he acted as chief engineer, and in 1900 he received the Gzowski Medal of the Engineering Institute of Canada.

A. C. TREMAINE SHEPPARD, chief of the reproduction section of the Topographical Survey Branch of the Canadian Department of Mines and Resources, died in Ottawa, May 17. He had been on the survey staff of the Dominion Government for 30 years.

CARL D. HIGGINS, 52, died May 20 in Kansas City. He was a partner in the Rathford Engineering Co. and for many years superintendent for the Boyle-Pryor and John J. Pryor Construction Companies.

JAMES S. OSBORN, 67, a Jacksonville, Fla., contractor, died in that city recently.

THOMAS P. GIBBONS, retired civil engineer, died recently at his home near Braidwood, Ill., at the age of 55.

NATHANIEL D. MOORE, 59, civil and mining engineer and president of the $10,000,000 Pacific Coast Co. of Seattle, died there May 17. After work in Idaho and British Columbia, he entered the employ of the Pacific Coast Co. in 1899.

GEORGE GIBBS, known as the engineer who perfected electro-traction and interlocking signals for the Pennsylvania Railroad, died May 20 in Philadelphia, at the age of 79. Gibbs was graduated from Stevens Institute in 1882. In 1911 he was awarded the Norman Medal of the American Society of Civil Engineers, and in 1930 he received the Wellington prize.

WILLIAM H. CROWTHERS, for a number of years construction engineer at E. I. duPont de Nemours & Co. plant in Philadelphia, died there May 21. He was 42.

FRANCIS W. DEAN, 88, for many years a consulting engineer at Boston, Mass., died at his home in Lexington, Mass., on May 25. Dean was educated at the then Laurence Scientific School of Harvard University, and taught civil engineering at that university for several years before entering private practie. Dean was a past president of the American Society of Mechanical Engineers and a former member of the Lexington Water and Beverage Commission.

CHARLES S. ABBOTT, for 50 years secretary of the Modesto, Calif., irrigation district, died May 23 in Tracy, Calif. at the age of 82.

CLAUS A. ANDERSON, Minneapolis contractor, died there recently at the age of 86.

CHARLES MOAD, 56, chemist at the Fort Wayne, Ind., filtration plant for the last five years, died May 15.

W. J. CROOM, safety director of the city of Durham, N. C., was drowned May 13.

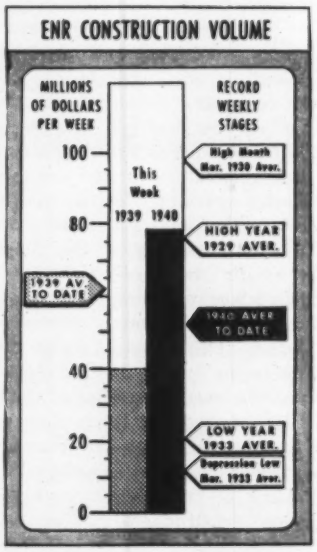
JOHN B. MATTHEWS, contractor, died in Sanford, N. C., May 17, at the age of 70.

CONTRACTS AND CAPITAL

ENGINEERING construction awards for the short week due to the Memorial Day holiday, $78,575,000, are the highest reported this year, and top the corresponding week last year by 97 per cent. Both private and public awards exceed their last year's levels, private gaining 329 per cent, and public, 69 per cent.

The construction volume for the year to date, $1,136,853,000, is 15 per cent below the volume for the initial 22-week period last year. Private construction exceeds the period a year ago by 17 per cent, but public awards are 26 per cent lower.

Commencement of work on the Fort Loudoun Dam in Tennessee, TVA, adds $28,500,000 to the earthwork and drainage total, bringing it to its highest volume of the year. Another federal project, an air depot at Mobile, Ala., is responsible for the highest unclassified total reported for the current year. In addition to these two classes of work, bridges, industrial buildings, and commercial building and large-scale private housing top their totals of a week ago, and also their respective volumes of a year ago.



New capital for construction purposes for the week, $5,759,000, is 84 per cent below the total for the corresponding week last year. The current week's financing is made up of $4,421,000 in state and municipal bonds, $1,300,000 in corporate security issues, and $38,000 in RFC loans for public improvements.

New construction financing for the year to date, $581,403,000, is 33 per cent lower than the $871,127,000 reported for the 22-week period last year.

CONTRACTS

(Thousands of dollars)

	Week Ending June 1 1939	May 25 1940	May 30 1940
Federal	$4,334	$5,179	$42,365
State & Municipal	31,287	23,587	17,906
Total public....	$35,621	$28,766	$60,271
Total private...	4,266	15,091	18,304
TOTALS	$39,887	$43,857	$78,575
Cumulative 1940 .....(22 weeks)...			$1,136,853
1939 .....(22 weeks)...			$1,334,716

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial building, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1939 22 Wks.	1940 22 Wks.
NON-FEDERAL ...	$559,700	$581,403
Corp. Securities..	118,125	75,944
State & Mun.....	287,298	421,305
R.E.A. loans.....	37,801	.....
U.S.H.A. loans...	116,226	78,430
R.F.C. loans.....	250	5,724
FEDERAL	$311,427	$.....
TOTAL CAPITAL..	$871,127	$581,403

FHA MORTGAGES

	Week Ending May 27 1939	May 18 1940	May 25 1940
Selected for appraisal	$24,283	$29,703	$29,500*
Cumulative 1940 .....(21 weeks)....			$503,202*
1939 .....(21 weeks)....			$489,237

* Subject for revision.

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	May '40..	238.86	114.82
Building Cost	May '40..	201.17	108.75
Volume	Apr. '40..	191	84

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

FLOOD WALL KITTANNING PA.

OWNER: U. S. Engineer Office, Pittsburgh, Pa., W. E. R. Covell, District Engineer.

PROJECT: Construction of the Kittanning Flood Wall and appurtenant works on Allegheny River at Kittanning, Armstrong County, Pa.

CONDITIONS: Contractor to furnish all materials and complete work in 210 contract days. Highway and water transportation facilities available. Care must be taken not to interfere with other contractors in vicinity. Government to furnish 30-ft. right-of-way along existing dike; arrangements must be made with proper city and private owners for use of streets and adjoining properties. Wages are: skilled labor, $1,00 to $1.40 per hr.; semi-skilled, 75 to 90c.; and common, 65c. per hr.

BIDS: Twenty-five bids were opened April 15, 1940, ranging from the low of $73,826 to $149,862. Government estimate, $111,723.

LOW BIDDERS:

1. Stewart O. Strandberg, Chicago, Ill.....$73,826
2. Tonawanda Engr. Corp., Tonawanda, N. Y..... 78,112
3. J. T. McCarthy Co., Davenport, Iowa..... 89,537

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Excavation	14,000 c. y.	$0.325	$0.38	$0.50
2. Random fill	11,000 c. y.	.40	.44	.50
3. Compacted fill	700 c. y.	.75	.60	.82
4. Gravel drain	310 c. y.	2.80	2.50	2.32
5. Concrete cribbing	1,400 s. f.	1.60	1.40	1.53
6. Concrete	3,500 c. y.	10.50	12.00	15.90
7. Reinforcing steel	190,000 lb.	.0375	.04	.043
8. Copper water stops	2,100 lb.	.60	.50	.50
9. Misc. metalwork	1,500 lb.	.20	.40	.24
10. Manhole covers	L.S.	125.00	200.00	250.00
11. Cast iron pipe	1,650 lb.	.20	.15	.13
12. Highway guard fence	520 l. f.	1.00	1.20	1.25
13. Seed and care of lawn	L.S.	250.00	1,150.00	250.00
14. Riprap	2,700 s. y.	4.25	3.00	1.35
15. Derrick stone	220 c. y.	6.00	6.00	3.35
16. Flap valves	L.S.	250.00	255.00	165.00
17. Impervious fill	3,000 c. y.	.75	.55	.82

HIGHWAY BRIDGE, WEST VIRGINIA

OWNER: West Virginia State Road Comn., M. R. Hamill, secy., Charleston.

PROJECT: Construction of 3-span continuous I-beam bridge, Brandywine, Pendleton County, W. Va. Includes two 53-ft. and one 65-ft. spans on concrete substructure; and grading draining, road mix on macadam.

CONDITIONS: Materials to be furnished by contractor and work must be completed in 110 working days. Bids were asked on woven wire fabric guard rail and a three-cable guard rail; award was made on former. Rail and highway transportation facilities available. Wages are: skilled, $1.00 per hr.; semi-skilled, 45c.; and common, 40c. per hr.

BIDS: Eight bids were received April 2, 1940, ranging from the contract low of $25,959 to $29,778.

LOW BIDDERS:

1. Pocahontas Constr. Co., Lewisburg, W. Va. (contract) $25,959
2. Murphy Constr. Co., Morgantown, W. Va..... 26,672
3. Echols Bros., Staunton, Va..... 26,829

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Dry excavation	135 c. y.	$1.00	$1.00	$1.50
2. Wet excavation	90 c. y.	6.00	4.00	3.00
3. Rock excavation	20 c. y.	10.00	5.00	5.00
4. Cl. A conc., superstr	130 c. y.	20.00	21.00	20.00
5. Cl. A conc., substr	59.7 c. y.	20.00	20.00	20.00
6. Cl. B concrete	178 c. y.	16.00	18.00	16.00
7. Concrete railing	344 l. f.	3.00	3.50	3.50
8. Reinforcing bars	34,237 lb.	.045	.05	.045
9. Steel superstructure	L.S.	6,994.00	6,400.00	7,800.00
10. Clear right-of-way	1,850 l. f.	.02	.04	.04
11. Unclassified excav.	3,500 c. y.	.50	.50	.50
12. Structure excavation	44 c. y.	2.00	1.50	1.00
13. Macadam base course	800 c. y.	4.75	4.75	5.00
14. Bitum. surf. aggr. limestone	240 ton	3.50	4.00	4.00
15. Tar, prime	1,800 gal.	.20	.15	.15
16. Tar, mix	5,100 gal.	.20	.15	.13
17. Corr. met. pipe, painted or coated	80 l. f.	2.00	2.50	2.50
18. Class B concrete	6 c. y.	18.00	18.00	20.00
19. Woven wire fabric guard rail	168 l. f.	.60	.60	1.00
20. End anchor assembly	8 ea.	12.00	15.00	5.00
21. Extra length posts	21 l. f.	.15	.20	.30
22. Remove present conc. struct	L.S.	500.00	1,400.00	750.00

HIGHWAY IMPROVEMENTS KANSAS

OWNER: Kansas State Highway Dept., Topeka; R. B. Wills, state highway engr.

PROJECT: Improving 5.875 miles of Highway 23 from Hoxie in southerly direction, Sheridan County, Kansas. Includes grading, surfacing, earthwork, and culverts.

CONDITIONS: Rail and highway transportation facilities available. Work to be completed in 200 working days. All materials furnished by contractor. Minimum wages specified are: skilled, 65c. per hr.; semi-skilled, 50c.; and common, 40c. per hr.

BIDS: Eleven bids were received Feb. 28, 1940, ranging from the contract low of $66,892 to $89,630.

LOW BIDDERS:

1. Central Constr. Co., Hoisington, Kansas (contract) $66,892
2. H. J. Taylor Constr. Co., Salina, Kansas..... 69,558
3. Cook and Waddell, Ottawa, Kansas..... 71,311

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Large trees	25 ea.	$4.00	$5.00	$5.00
2. Grubbing hedge	167 l.f.	.20	.20	.10
3. Common excavation	370,000 c.y.	.10	.102	.102
4. Uncl. culv. excav., type 2	1,766 c.y.	.60	.50	.60
5. Compaction of earthwork	14,757 c.y.	.025	.03	.05
6. Water hauled	737.8 M gal.	.60	.50	.50
7. Water pumped	737.8 M gal.	.25	1.00	5.00
8. Water system	L.S.	250.00	100.00	1,000.00
9. Treated subgrade	..... s.y.	.15	.15	.15
10. Conc. pavement, 6-in. uniform	17.6 s.y.	1.70	2.00	2.50
11. Conc. pavement, 7-in. uniform	107 s.y.	1.80	2.50	2.80
12. Class A concrete	930.5 c.y.	12.00	15.00	14.50
13. Reinforcing steel	94,910 lb.	.042	.0425	.045
14. 18-in. entrance pipe	104 l.f.	1.50	1.35	1.30
15. 24-in entrance pipe	216 l.f.	2.25	2.00	2.25
16. 24-in. cross road pipe	32 l.f.	2.75	2.00	2.35
17. 24-in. side road pipe	124 l.f.	2.75	2.00	2.30
18. 15-in. storm sewers, (RCCP)	243 l.f.	1.75	1.75	1.70
19. 18-in. storm sewers	47 l.f.	2.25	2.50	1.80
20. 24-in. storm sewers	838 l.f.	2.75	2.60	2.60
21. Comb. curb and gutter, type I	2,107.34 l.f.	.75	.65	.85
22. Comb. curb and gutter, type II	323 l.f.	.75	.70	.85
23. Gutters	108 l.f.	1.00	.90	.60
24. Protection curb	399 l.f.	.15	1.25	1.20
25. Slope drains	391 l.f.	.50	1.25	1.05
26. Flume inlets	8 ea.	50.00	25.00	24.00
27. Flume outlets	8 ea.	50.00	20.00	20.00
28. Rein. conc. manholes	4 ea.	70.00	90.00	72.00
29. Inlets, type A-5	7 ea.	70.00	65.00	81.00
30. Inlets, type A-7.5	1 ea.	100.00	95.00	115.00
31. Steel plate guard fence	1,875 l.f.	1.00	.90	.85
32. Wire mesh wash checks	3,225 l.f.	.40	.30	.45
33. Sidewalk constr., 4-in. T	506.5 s.y.	1.45	1.20	1.60
34. Sidewalk constr., 4-in. T spec	68.2 s.y.	1.80	1.60	2.40
35. Sidewalk constr., 6-in. T	57.2 s.y.	1.75	2.00	2.34
36. 1½-in. pipe handrail	120.5 l.f.	2.00	1.00	2.40
37. Reflectorized warning signs	2 ea.	20.00	25.00	35.00
38. Reflectorized RR crossing signs	2 ea.	50.00	75.00	100.00
39. Remove exist. structures	L.S.	125.00	200.00	300.00

CONSTRUCTION REPORTS

Compiled by BUSINESS NEWS DEPARTMENT
Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, MANAGER
SCOTT McLEOD, STATISTICIAN
(Daily service also available—Write for details)

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger; water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

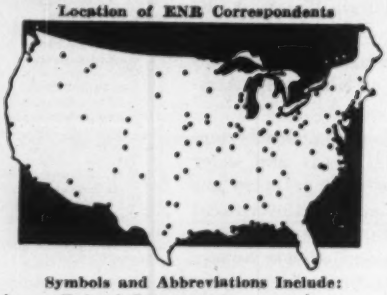
Classes of Construction
(Named in order of Listing)

Water Supply	Unclassified
Sewers, Waste Disposal	Latin America
Bridges, Grade Cross'gs	Public Buildings
Streets & Roads	Commercial Buildings
Earthwork, Waterways	Industrial Buildings

Stages Reported

PROPOSED: except Streets & Roads):
BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);
LOW BIDDERS: All low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Location of ENR Correspondents



Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Dates shown are of issue in which last previous report was published.

WATER SUPPLY

PROPOSED WORK

Ark., Clarendon—C. J. Thomas, mayor, new water lines. $15,000.

Calif., Napa—State, preliminary estimates of cost prepared for dam in Rector Canyon to furnish water for State Institutions in Napa Valley. Over $300,000. E. Hyatt, P. Wks. Bldg., Sacramento, state engr.

Calif., Oakland—East Bay Municipal Utility Dist., 512-16 St., rein.-con. reservoir (Rubin dr. area), $45,000.

Calif., San Francisco—City and San Francisco Co., surveys, preliminary plans for Cherry River dam site developments. $25,000.

Calif., San Francisco—City and San Francisco Co., surveys pipe line from San Andreas Reservoir to Sunset, Richmond and Twin Peaks Dist. $230,000. L. T. McAtee, 425 Mason St., ch. engr. P. Utilities Comn.

Fla., Clearwater—Bd. Comrs. Pinellas Co., Clearwater, exten. water sys. to new areas on Keys near Pass-a-Grille. Over $25,000. To be financed by RFC loan.

★**†Fla., Key West**—Navy Dpt., Wash., D. C., water line from mainland to Naval Air Station. $2,000,000.

Ia., Council Bluffs—S. W. McCall, mayor, two 2 m.g. reservoirs. $132,937. Application filed with WPA. J. Boyne, city engr.

Ia., Runnells—C. B. Osborne, city clk., WW sys. $20,000.

Kan., Kansas City—Bd. Public Utilities, 24 in. waterline under Kaw River near 12 St. Burns & McDonnell Engr. Co., 107 W. Linwood St., Kansas City, Mo., engrs.

Kan., Kansas City—Quindaro Twp., preliminary plans exten. 10 mi. waterlines. Applied to WPA for labor. E. T. Archer & Co., New England Bldg., Kansas City, Mo., engrs.

N. Y., Elmira—Elmira Water Bd., City Hall, H. Beardsley, mgr., 10 in. c.i. mains, South Ave., 8 in. S. Main St. and 6 in. Lovell Ave. $15,000.

N. C., Coats—Defeated $38,000 bonds, water and sewer sys. $90,000. CD 4/16—ENR 4/18.

O., Columbus—Exten. watermains in various sections. $300,000. Will apply for WPA funds. P. W. Maetzel city engr.

O., Nelsonville—WW imprvs., revamping supply and pump. sys., pump. equip., meters, auxiliary main at Hocking River new pumphouse and addns., extens. to mains. $100,000. Burgess & Niple, 368 E. Broad St., Columbus, engrs.

O., New Waterford—Approved $13,000 bond issue WW sys. CD 4/23—ENR 4/25.

O., Somerset—WW imprvs., reservoir. $25,000 bond issue approved. Burgess & Niple, 568 E. Broad St., Columbus, engrs. CD 3/13—ENR 3/21.

O., South Webster—Authorized issuance $43,000 bonds to finance construction WW and sewerage sys., treatment plants. $130,000. Application made for WPA gr. J. L. Keller, South Webster, mayor. CD 3/22/39—ENR 3/30.

★**Alta., Calgary**—Alberta Petroleum Assn., Calgary, 11 new wells, Turner Valley region $1,650,000.

Alta., Edmonton—A. Russell, city clk., new storage basin for clear water at power plant. $41,700. R. G. Watson, City Hall, engr. CD 4/8—ENR 4/11.

Ont., Cooksville—Toronto Twp. watermains sys., Contre Rd. $17,000.

Ont., Newmarket—Development flow water 1¼ mi. distant from town. $15,000. W. O. Hallaran, Town Hall, engr. CD 5/14—ENR 5/16.

Que., Brownsburg—Gohier & Dorais, engrs., 10 St. James St. E., Montreal, bids soon WW and sewerage sys. for Town. $150,000. CD 5/14—ENR 5/16.

Que., Chambly—Supply water from Richelieu River, chlorination and filtration plant. $30,000. Dpt. Health, Quebec City, engr.

Que., Chambly Basin—Supply of water from Richelieu River, chlorination and filtration plant. $30,000. Dpt. Health, Quebec City, engr.

Que., Chicoutimi—Completing 3 m.g. filtration plant. $25,000. Larvie & Delisle, Chicoutimi, engrs.

Que., Lachine—New emergency intake pipe in Lake St. Louis, laying, supplying 550 ft. 36 in. concrete pipe from suction well to Dominion Govt. wharf, also sewers. $26,000 plus $4,700, for sewer pipe. A. J. Deslauriers, City Hall, engr.

Que., Lachute—Water sys. imprvs., water chlorination plant. $25,000. S. Quimet, Town Hall, engr.

Que., Longueuil—New intake pipe in St. Laurence River, changing pressure filters for up-to-date mechanical gravity filter. $60,000. A. Vincent, City Hall, engr. CD 7/26—ENR 8/2.

Que., Louiseville—Changing actual pipe line for one of greater diam., underground water supply from Maskinonge River, filtration and chlorination plants. $50,000. W. A. Roy, Town Hall, engr.

Que., Mont Laurier—Replacing old wooden pipe line, distr. mains with new wooden pipe and c.i. distr. mains. $30,000. J. B. Reid, Town Hall, engr.

Que., Richelieu—Supply water from Richelieu River, chlorination and filtration plant. $30,000. Dpt. Health, Quebec City, engr.

Que., Rimouski—Exten. water distr. sys., replacing aqueduct. $30,000. M. Pineau, Town Hall, engr.

Que., Rouyn—Water supply from Noranda and constructing storage reservoir. $40,000. W. Bouchard, Town Hall, engr.

Que., St. Therese—WW sys. to replace private ownership, supply from wells in gravel bed new distr sys. $30,000. F. Roux Town Hall, engr.

Que., Thetford Mines—WW sys. imprvs., water chlorination plant. $25,000 G. Beaudet, Town Hall, engr.

Que., Windsor Mills—Water sys. imprvs., water chlorination plant. $50,000. Dpt. Health, Quebec City, engr.

Sask., Regina—Canadian National Ry., C. S. Gzowski, ch. engr., 360 McGill St., Montreal, Que., stand pipe, 2,800 ft. 8 in. c.i. pipe. Over $15,000.

BIDS ASKED

Bids Asked June 7

Sask., Caron—City Council Moose Jaw, 20x50 ft. brick, tile pumphouse, piping, valves, switching equip. 1,000,000 imperial gal. pump and motor. $27,000. A. W. Fawkes, City Hall, Moose Jaw, engr.

Bids Asked June 11

Calif., Buena Park—Orange Co. Water Dist. 2, County Court House, Santa Ana, 100,000 gal. elevated steel hemispherical water tank, 100 ft. high. Over $15,000. N. H. Neff, Court House, Santa Ana, engr.

Bids Asked June 11

†N. C., Fort Bragg—Con. Q.M., Fort Bragg, booster pump. station, steel stand pipe, appurtenances; adv. ENR 5/30.

Bids Asked June 12

Ind., Walton—Town Bd., H. Beckley, chn., WW sys., deep well pump, elevated steel tank, c.i. watermains. $20,000. M. L. Burden, 103½ N. Harrison St., Alexandria, consult. engr.

Bids Asked June 18

†Idaho, Boise—Veterans Administration, Arlington Bldg., Wash. D. C., drilling deep well.

Bids Asked June 19

†Calif., Mare Island—P. Wks. Officer, Mare Island, Navy Yard, pump. plant, Spec. 9800.

LOW BIDDERS

†Calif., Bishop—Dpt. Interior, Indian, Irrigation Div., 647 Phelan Bldg., San Francisco, May 20, water distr. sys. complete with mains, service lines, fittings, valves, from R. J. Cochrane, Tarzana. **$16,925.** CD 5/14.

N. Y., New York—Bd. Water Supply, G. J. Gillespie, pres., 346 Bway., May 21, Contr. 348, furnishing, testing, del. eleven 48x36x16 in., two 72x48x48 in. and two 72x48x36 in. bronze shaft caps, appurtenances, for Delaware Aqueduct, from American Manganese Bronze Co., 233 Bway. **$172,830.** CD 5/2—ENR 5/9.

CONTRACTS AWARDED

Fla., Hollywood—J. Armstrong, Hallandale Beach, Hollywood, 8,000 ft. c.i. watermains, own forces. Over **$15,000.**

Minn., Rothsay—A. Amundson, village clk., complete WW sys., **WPA. $42,000.**

N. J., Cranbury—East Brunswick Twp., Twp. Hall, Old Bridge, watermains, appurtenances, **WPA. $40,132.** CD 9/29—ENR 10/5.

Pa., Phila.—Dpt. P. Wks., Bur. Eng., Surveys & Zoning, City Hall Annex, filtration plant imprvs., to Welsbach St. Illuminating Co., Walnut St. Over **$15,000.** J. H. Neeson, dir. Bids 5/3. CD 4/22—ENR 4/25.

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Ark., Clarendon—C. J. Thomas, mayor, new sewer lines. $25,000.

Ark., Little Rock—Repairing sewerage sys. $25,000. G. E. Garauflo, City Hall, engr.

Calif., Palo Alto—Approves preliminary estimates of cost, storm water sewerage sys. and street paving. $273,855.

Calif., San Jose—Burbank Sanitary Dist., c/o County Clerk, San Jose, voted $55,000, sanitary sewers.

Calif., Sanol—Residents in west area of city to form dist. at election June 25 to establish sanitary sewer district following formation means of financing will be worked out to construct same. Over $29,000.

Fla., Fort Lauderdale—Expanding sewerage sys. Solomon & Keis, Fort Lauderdale, engrs.

Fla., Hollywood—A. Dickey, city mgr., City Hall, sewerage sys. for Hollywood Beach sect. Over $25,000.

†Ill., Scott Field (Belleville)—Con. Q.M., Scott Field, rejected bids May 1, sewerage treatment plant. Will readvertise. CD 4/23—ENR 4/25.

Ia., Lamoni—M. A. Hynden, town clk., sewage disposal plant.

Minn., North Mankato (P. O. Mankato)—Sewage disposal plant. $40,000.

Minn., Waseca—W. Brattrud, city clk., sewage disposal plant. $60,000. G. Cox, city engr.

Mont., Kalispell—F. J. Robischon, city clk., sewers and sewage plant. $79,000.